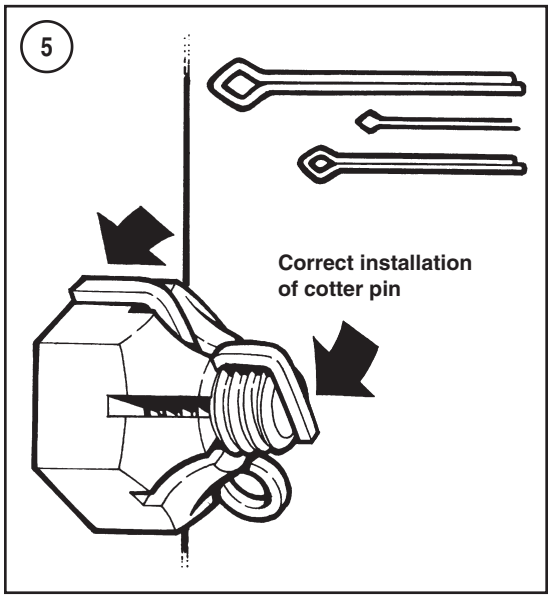

Torque Specifications

The materials used in the manufacture of a ATV may be subjected to uneven stresses if the fasteners of the various subassemblies are not installed and tightened correctly. Fasteners that are improperly installed or that work loose can cause extensive damage. Use an accurate torque wrench when tightening fasteners, and tighten each fastener to its specified torque.

Torque specifications for specific components appear at the end of the appropriate chapters. Specifications for torque are provided in Newton-meters (N•m), foot-pounds (ft.-lb.) and inch-pounds (in.-lb.). Refer to **Table 6** for torque conversion formulas and to **Table 5** for general torque specifications. To use **Table 5**, first determine the size of the fastener as described in *Fasteners* in this chapter. Locate that size fastener in **Table 5**, and tighten the fastener to the indicated torque. Torque wrenches are described in the *Basic Tools* section of this chapter.

Self-Locking Fasteners

Several types of bolts, screws and nuts use various means to create an interference between the threads of two fasteners. The most common types are the nylon-insert nut and a dry adhesive coating on the threads of a bolt.

Self-locking fasteners offer greater holding strength than standard fasteners, which improve their resistance to vibration. Most self-locking fasteners cannot be reused. The materials used to form the lock become distorted after the initial installation and removal. Always discard and replace self-locking fasteners after their removal. Do not replace self-locking fasteners with standard fasteners.

Washers

There are two basic types of washers: flat washers and lockwashers. Flat washers are simple discs with a hole for a screw or bolt. Lockwashers are used to prevent a fastener from working loose. Washers can be used as spacers and seals, to help distribute fastener load and to prevent the fastener from damaging the component.

When replacing washers, make sure the replacements are of the same design and quality as the originals.

Cotter Pins

A cotter pin is a split metal pin inserted into a hole or slot to prevent a fastener from working loose. In certain applications, such as the rear axle on an ATV or motorcycle, the fastener must be secured in this way. For these applications, a cotter pin and castellated (slotted) nut is used.

To use a cotter pin, first make sure the pin's diameter is correct for the hole in the fastener. After correctly tightening the fastener and aligning the holes, insert the cotter pin through the hole and bend the ends over the fastener (**Figure 5**). Unless instructed to do so, never loosen a torqued fastener to align the holes. If the holes do not align, tighten the fastener just enough to achieve alignment.

Cotter pins are available in various diameters and lengths. Measure length from the bottom of the head to the tip of the shortest pin.

Snap Rings

Snap rings (**Figure 6**) are circular-shaped metal retaining clips. They secure parts and gears onto shafts, pins or rods. External type snap rings are used to retain items on shafts. Internal type snap rings secure parts within housing bores. In some ap-